

## WEST Search History





DATE: Thursday, March 04, 2004

<u>Hide?</u>	<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>
		<i>DB=USPT; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L16	L14 and l4	3
<input type="checkbox"/>	L15	L14 and l3 and l4	1
<input type="checkbox"/>	L14	(graphical same display) same (user adj profile\$)	25
<input type="checkbox"/>	L13	L12 and cue\$	4
<input type="checkbox"/>	L12	L11 and (user adj profile\$)	17
<input type="checkbox"/>	L11	L10 and proxy	17
<input type="checkbox"/>	L10	L9 and (graphical same form)	23
<input type="checkbox"/>	L9	L8 and represent\$4	49
<input type="checkbox"/>	L8	L7 and l6	53
<input type="checkbox"/>	L7	l2 and l3	656
<input type="checkbox"/>	L6	(user or client) adj profil\$2	2690
<input type="checkbox"/>	L5	enviroment\$ adj profil\$2	1
<input type="checkbox"/>	L4	www and internet and network	3926
<input type="checkbox"/>	L3	client and server	20354
<input type="checkbox"/>	L2	graphical adj display	5007
<input type="checkbox"/>	L1	abstract graphical display	0

END OF SEARCH HISTORY

US-PAT-NO: 5754939

DOCUMENT-IDENTIFIER: US 5754939 A

TITLE: System for generation of user  
profiles for a system for  
customized electronic identification  
of desirable objects

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US Patent No. - PN (1):  
5754939

Detailed Description Text - DETX (85):

If the target objects are electronic mail messages, interest points might also be added in the case of a particularly lengthy or particularly prompt reply. If the target objects are purchasable goods, interest points might be added for target objects that the user actually purchases, with further points in the case of a large-quantity or high-price purchase. In any domain, further points might be added for target objects that the user accesses early in a session, on the grounds that users access the objects that most interest them first. Other potential sources of passive feedback include an electronic measurement of the extent to which the user's pupils dilate while the user views the target object or a description of the target object. It is possible to combine active and passive feedback. One option is to take a weighted average of the two ratings. Another option is to use passive feedback by default, but to allow the user to examine and actively modify the passive feedback score. In the scenario above, for instance, an uninteresting article

may sometimes remain on the display device for a long period while the user is engaged in unrelated business; the passive feedback score is then inappropriately high, and the user may wish to correct it before continuing. In the preferred embodiment of the invention, a visual indicator, such as a sliding bar or indicator needle on the user's screen, can be used to continuously display the passive feedback score estimated by the system for the target object being viewed, unless the user has manually adjusted the indicator by a mouse operation or other means in order to reflect a different score for this target object, after which the indicator displays the active feedback score selected by the user, and this active feedback score is used by the system instead of the passive feedback score. In a variation, the user cannot see or adjust the indicator until just after the user has finished viewing the target object. Regardless how a user's feedback is computed, it is stored long-term as part of that user's target profile interest summary.

Detailed Description Text - DETX (168):

8. Either the response message M2 from the information server S4 to the user, or a subsequent message sent by the proxy server S2 to the user, may contain advertising material that is related to the user's request and/or is targeted to the user. Typically, if the user has just retrieved a target object X then (a) either proxy server S2 or information server S4 determines a weighted set of advertisements that are "associated with" target object X, (b) a subset of this set is chosen randomly, where the weight of an advertisement is proportional to the probability that it is included in the subset, and (c) proxy server S2 selects from this subset just those

advertisements that the user is most likely to be interested in. In the variation where proxy server S2 determines the set of advertisements associated with target object X, then this set typically consists of all advertisements that the proxy server's owner has been paid to disseminate and whose target profiles are within a threshold similarity distance of the target profile of target object X. In the variation where proxy server S4 determines the set of advertisements associated with target object X advertisers typically purchase the right to include advertisements in this set. In either case, the weight of an advertisement is determined by the amount that an advertiser is willing to pay. Following step (c), proxy server S2 retrieves the selected advertising material and transmits it to the user's client processor C3, where it will be displayed to the user, within a specified length of time after it is received, by a trusted process running on the user's client processor C3. When proxy server S2 transmits an advertisement, it sends a message to the advertiser, indicating that the advertisement has been transmitted to a user with a particular predicted level of interest. The message may also indicate the identity of target object X. In return, the advertiser may transmit an electronic payment to proxy server S2; proxy server S2 retains a service fee for itself, optionally forwards a service fee to information server S4, and the balance is forwarded to the user or used to credit the user's account on the proxy server.

Detailed Description Text - DETX (298):

The filtering technology of the news clipping service is not limited to news articles provided by a single source, but may be extended to articles or target objects collected from any number of sources. For example,

rather than identifying new news articles of interest, the technology may identify new or updated World Wide Web pages of interest. In a second application, termed "broadcast clipping," where individual users desire to broadcast messages to all interested users, the pool of news articles is replaced by a pool of messages to be broadcast, and these messages are sent to the broadcast-clipping-service subscribers most interested in them. In a third application, the system scans the transcripts of all real-time spoken or written discussions on the network that are currently in progress and designated as public, and employs the news-clipping technology to rapidly identify discussions that the user may be interested in joining, or to rapidly identify and notify users who may be interested in joining an ongoing discussion. In a fourth application, the method is used as a post-process that filters and ranks in order of interest the many target objects found by a conventional database search, such as a search for all homes selling for under \$200,000 in a given area, for all 1994 news articles about Marcia Clark, or for all Italian-language films. In a fifth application, the method is used to filter and rank the links in a hypertext document by estimating the user's interest in the document or other object associated with each link. In a sixth application, paying advertisers, who may be companies or individuals, are the source of advertisements or other messages, which take the place of the news articles in the news clipping service. A consumer who buys a product is deemed to have provided positive relevance feedback on advertisements for that product, and a consumer who buys a product apparently because of a particular advertisement (for example, by using a coupon clipped from

that advertisement)  
is deemed to have provided particularly high relevance  
feedback on that  
advertisement. Such feedback may be communicated to a  
proxy server by the  
consumer's client processor (if the consumer is making the  
purchase  
electronically), by the retail vendor, or by the  
credit-card reader (at the  
vendor's establishment) that the consumer uses to pay for  
the purchase. Given  
a database of such relevance feedback, the disclosed  
technology is then used to  
match advertisements with those users who are most  
interested in them;  
advertisements selected for a user are presented to that  
user by any one of  
several means, including electronic mail, automatic display  
on the users  
~~screen, or printing~~ them on a printer at a retail  
establishment where the  
consumer is paying for a purchase. The threshold distance  
used to identify  
interest may be increased for a particular advertisement,  
causing the system to  
present that advertisement to more users, in accordance  
with the amount that  
the advertiser is willing to pay.

Detailed Description Text - DETX (323):

Since a user who is navigating the cluster tree is  
repeatedly expected to  
select one of several subclusters from a menu, these  
subclusters must be  
usefully labeled (at step 503), in such a way as to suggest  
their content to  
the human user. It is straightforward to include some  
basic information about  
each subcluster in its label, such as the number of target  
objects the  
subcluster contains (possibly just 1) and the number of  
these that have been  
added or updated recently. However, it is also necessary  
to display additional  
information that indicates the cluster's content. This  
content-descriptive  
information may be provided by a human, particularly for

large or frequently accessed clusters, but it may also be generated automatically. The basic automatic technique is simply to display the cluster's "characteristic value" for each of a few highly weighted attributes. With numeric attributes, this may be taken to mean the cluster's average value for that attribute: thus, if the "year of release" attribute is highly weighted in predicting which movies a user will like, then it is useful to display average year of release as part of each cluster's label. Thus the user sees that one cluster consists of movies that were released around 1962, while another consists of movies from around 1982. For short textual attributes, such as "title of movie" or "title of document," the system can display the attribute's value for the cluster member (target object) whose profile is most similar to the cluster's profile (the mean profile for all members of the cluster), for example, the title of the most typical movie in the cluster. For longer textual attributes, a useful technique is to select those terms for which the amount by which the term's average TF/IDF score across members of the cluster exceeds the term's average TF/IDF score across all target objects is greatest, either in absolute terms or else as a fraction of the standard deviation of the term's TF/IDF score across all target objects. The selected terms are replaced with their morphological stems, eliminating duplicates (so that if both "slept" and "sleeping" were selected, they would be replaced by the single term "sleep") and optionally eliminating close synonyms or collocates (so that if both "nurse" and "medical" were selected, they might both be replaced by a single term such as "nurse," "medical," "medicine," or "hospital"). The resulting set of terms is displayed as part of the label. Finally, if

freely redistributable  
thumbnail photographs or other graphical images are  
associated with some of the  
target objects in the cluster for labeling purposes, then  
the system can  
display as part of the label the image or images whose  
associated target  
objects have target profiles most similar to the cluster  
profile.

Detailed Description Text - DETX (325):

It is not necessary for menus to be displayed as simple  
lists of labeled  
options; it is possible to display or print a menu in a  
form that shows in more  
detail the relation of the different menu options to each  
other. Thus, in a  
variation, the menu options are visually laid out in two  
dimensions or in a  
perspective drawing of three dimensions. Each option is  
displayed or printed  
as a textual or graphical label. The physical coordinates  
at which the options  
are displayed or printed are generated by the following  
sequence of steps: (1)  
construct for each option the cluster profile of the  
cluster it represents, (2)  
construct from each cluster profile its decomposition into  
a numeric vector, as  
described above, (3) apply singular value decomposition  
(SVD) to determine the  
set of two or three orthogonal linear axes along which  
these numeric vectors  
are most greatly differentiated, and (4) take the  
coordinates of each option to  
be the projected coordinates of that option's numeric  
vector along said axes.  
Step (3) may be varied to determine a set of, say, 6 axes,  
so that step (4)  
lays out the options in a 6-dimensional space; in this case  
the user may view  
the geometric projection of the 6-dimensional layout onto  
any plane passing  
through the origin, and may rotate this viewing plane in  
order to see differing  
configurations of the options, which emphasize similarity  
with respect to



differing attributes in the profiles of the associated clusters. In the visual representation, the sizes of the cluster labels can be varied according to the number of objects contained in the corresponding clusters. In a further variation, all options from the parent menu are displayed in some number of dimensions, as just described, but with the option corresponding to the current menu replaced by a more prominent subdisplay of the options on the current menu; optionally, the scale of this composite display may be gradually increased over time, thereby increasing the area of the screen devoted to showing the options on the current menu, and giving the visual impression that the user is regarding the parent cluster and "zooming in" on the current cluster and its subclusters.

#### Detailed Description Text - DETX (330):

The filtering technology described earlier can also aid the user in navigating among the target objects. When the system presents the user with a menu of subclusters of a cluster C of target objects, it can simultaneously present an additional menu of the most interesting target objects in cluster C, so that the user has the choice of accessing a subcluster or directly accessing one of the target objects. If this additional menu lists  $n$  target objects, then for each  $i$  between 1 and  $n$  inclusive, in increasing order, the  $i$ .sup.th most prominent choice on this additional menu, which choice is denoted  $Top(C,i)$ , is found by considering all target objects in cluster C that are further than a threshold distance  $t$  from all of  $Top(C,1)$ ,  $Top(C,2)$ , . . .  $Top(C,i-1)$ , and selecting the one in which the user's interest is estimated to be highest. If the threshold distance  $t$  is 0, then the menu resulting from

this procedure simply displays the  $n$  most interesting objects in cluster  $C$ , but the threshold distance may be increased to achieve more variety in the target objects displayed. Generally the threshold distance  $t$  is chosen to be an affine function or other function of the cluster variance or cluster diameter of the cluster  $C$ .

Detailed Description Text - DETX (334):

Several techniques can then be used to make interesting clusters more easily accessible. The system can at the user's request or at all times display a special list of the most interesting clusters, or the most interesting subclusters of the current cluster, so that the user can select one of these clusters based on its label and jump directly to it. In general, when the system constructs a list of interesting clusters in this way, the  $I.\text{sup.th}$  most prominent choice on the list, which choice is denoted  $\text{Top}(I)$ , is found by considering all appropriate clusters  $C$  that are further than a threshold distance  $t$  from all of  $\text{Top}(1)$ ,  $\text{Top}(2)$ , . . .  $\text{Top}(I-1)$ , and selecting the one in which the user's interest is estimated to be highest. Here the threshold distance  $t$  is optionally dependent on the computed cluster variance or cluster diameter of the profiles in the latter cluster. Several techniques that reorganize the hierarchical menu tree are also useful. First, menus can be reorganized so that the most interesting subcluster choices appear earliest on the menu, or are visually marked as interesting; for example, their labels are displayed in a special color or type face, or are displayed together with a number or graphical image indicating the likely level of interest. Second, interesting clusters can be moved to menus higher in the tree, i.e., closer to

the root of the tree, so that they are easier to access if the user starts browsing at the root of the tree. Third, uninteresting clusters can be moved to menus lower in the tree, to make room for interesting clusters that are being moved higher. Fourth, clusters with an especially low interest score (representing active dislike) can simply be suppressed from the menus; thus, a user with children may assign an extremely negative weight to the "vulgarity" attribute in the determination of  $q$ , so that vulgar clusters and documents will not be available at all. As the interesting clusters and the documents in them migrate toward the top of the tree, a customized tree develops that can be more efficiently navigated by the particular user. If menus are chosen so that each menu item is chosen with approximately equal probability, then the expected number of choices the user has to make is minimized. If, for example, a user frequently accessed target objects whose profiles resembled the cluster profile of cluster (a, b, d) in FIG. 8 then the menu in FIG. 9 could be modified to show the structure illustrated in FIG. 10.

Detailed Description Text - DETX (338):

In one application, the browsing techniques described above may be applied to a domain where the target objects are purchasable goods.

When shoppers look for goods to purchase over the Internet or other electronic media, it is typically necessary to display thousands or tens of thousands of products in a fashion that helps consumers find the items they are looking for. The current practice is to use hand-crafted menus and sub-menus in which similar items are grouped together. It is possible to use the automated clustering and browsing methods described above to more effectively group and present the items.

US-PAT-NO: 6564261

DOCUMENT-IDENTIFIER: US 6564261 B1

TITLE: Distributed system to intelligently  
establish sessions between anonymous users over various  
networks

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Brief Summary Text - BSTX (9):

Various companies have created networks running on top of the Internet that allow users to send each other short text messages and monitor the status of other users, where the status is usually defined as whether a user is currently connected to the network or not. This kind of functionality is currently being considered as an IETF standard called IMPP (Instant Messaging and Presence Protocol).

Brief Summary Text - BSTX (10):

The Session Initiation Protocol (SIP) is in the process of becoming an IETF standard, and has been positioned as the successor of SS7 in IP based networks. The protocol basically allows users to invite other users to arbitrary communication sessions over the Internet, and at the same time allows for arbitrary routing of these invitations.

Brief Summary Text - BSTX (11):

The aforesaid IN and AIN approaches used in SS7 are limited to the phone network and are not easily extendable to other networks like the Internet. Thus, there is no easy way to advertise availability of other users to

communicate. There also is no easy way for users to configure their routing, except through limited interfaces. Instant messaging systems are typically only IP based, and do not in general allow communication across different networks. Most such systems rely on users to be connected to the system in order for their routing to be active and they disclose network addresses to other users, which potentially can be considered a security breach. Furthermore, most systems rely on a centralized architecture which may make it difficult to distribute a user database and traffic among many providers.

Drawing Description Text - DRTX (15):

FIG. 13 is a functional block diagram illustrating exemplary components of the cluster of FIG. 11 according to an embodiment of this invention, and further illustrating how the cluster may communicate with other entities such as clients, other cluster(s), and/or the Internet.

Detailed Description Text - DETX (38):

**"Profile."** A set of routes where each route is enabled for a user or a group of users as defined in the buddy/contact list. A profile is complete in the sense that for every user there is a route for every mode of communication.

Detailed Description Text - DETX (56):

Referring to FIG. 6, as users 7 have a globally unique identity, connections between users can be forwarded across clusters 1 (i.e., from one cluster 1 to another cluster 1). This may be done via a special service, i.e., the inter-cluster service, that acts as a proxy between services in different clusters. From the point of view of the services involved, the proxy is

preferably transparent or substantially transparent. The only limitation is that the cluster operator can configure the inter-cluster service to only allow remote access to a limited set of services. Thus operator specific value added services can be made exclusive for a given cluster.

Detailed Description Text - DETX (83):

As can be seen, the user servers (US) 19 includes online status service 31, user routing service(s) (RS) 33, device handlers 35, session service 37, user property service 39, load balancing service 41, and contact list service 43. Connection servers (CS) 21 include online status service proxy 51, contact status service 53, and lots of generic proxies 54. Intra-cluster servers (ICS) 23 include lots of generic proxies 55. The framework underlying each of these servers includes a UMF 25, notification broadcasting 57, authentication 59, I/O model 61, protocol compiler 63, and resource and failure detection 65. Operation and maintenance (O & M) server(s) 64 handles system configuration (e.g., provision/assignment of users) and/or monitoring of servers/clients in certain embodiments.

Detailed Description Text - DETX (84):

Still referring to FIG. 13, the online status service 31 stores users' online statuses, and broadcasts changes to these to subscribed contact status services the online status service proxy 51 sits between the client 11 and the US 19, forwarding requests to change the client's user's online status; it handles failure tolerance in case the client's US fails. In the case where the US fails, the proxy 51 will try to contact the US 19 that the UMF 25 has allocated for the user after the US crash, and establish the user's online

status on that server. The contact status service 53 subscribes to the online status of every user from its client's contact list. The contact list service 43 stores each user's contact list, allows the user 7 to access and manage it, and allows other services to read it (a blinded list may be a group in the contact list). The routing service (RS) 33 receives messages from users, and sends them to the correct device according to routing logic which resides at both the sending user's and the receiving user's side and can be set up by either user. The RS 33 allows users to access and manage their routing table.

Detailed Description Text - DETX (85):

Generic proxy(ies) 54, 55 resides on a CS 21 or an ICS 23. This component's responsibility is to act as a dumb, byte-forwarding proxy to many different services which reside on USs 19. Each device handler 35 at a server can receive messages, pass them to the user or an external system (such as SMS), store them, act on them, etc. Thus, device handlers 35 can act as bridges to external systems. The user property service 39 allows users 7 to read and change their own user profile, and to read those parts of other user's 7 profiles that they have access to.

Detailed Description Text - DETX (103):

Although not logically part of the framework (it's a service), the generic proxy 54, 55 is one of the core services supplied with the framework. Generic proxies act as byte-forwarding proxies from one stream to another. On CSs 21, generic proxies 54 are used in the following way: A generic proxy is registered for each protocol that clients are supposed to have access to in the back-end. When the generic proxy gets a connection request (type=x,

src UID=y, dst  
UID=z), it will accept it, then ask its framework to open a  
stream with  
parameters (x, y, z). Since the internal UMF is being used  
on CSs 21, this  
will open a stream to the US 19 servicing destination UID  
z, or to the ICS 23  
which is acting as a bridge to the cluster user z resides  
on. On other server  
types (e.g., US and/or ICS), generic proxies 55 are used in  
the same way. The  
difference here is that for connection requests coming from  
external clusters,  
the internal mapping function is used, but for connection  
requests coming from  
within the local cluster, the external mapping function is  
used. As can be  
seen from analysis of the above, the framework stream  
model, the UMF and  
generic proxies on ICSs allow services to connect to  
services for any user that  
can be reached in the network without knowing any details  
except the type of  
service that is to be connected to and the UID of the user  
to be connected to.

#### Detailed Description Text - DETX (107):

Routing logic (i.e. which choices are made to decide  
what to do with a  
message) may be implemented, e.g., by an RS 33, in a  
special-purpose  
pseudo-programming language dubbed RoutingTree, which is in  
essence a tree of  
nodes where all non-leaf nodes are decision points and leaf  
nodes are action  
nodes. Decisions at decision nodes can be made on a number  
of parameters,  
including the contents of the message being routed, the  
time and date, the  
state of certain parts of the database, etc. For each user,  
several different  
named routing profiles may be specified. Each routing  
profile contains a  
RoutingTree-specified routing logic. Routing profiles may  
be defined by the  
client. One routing profile is always active as the  
routing profile to use for



incoming messages (which one to use may be defined by the client), and whenever the client sends a message it specifies which routing profile to use for the outgoing message. In this way, different routing profiles may be used for different situations, i.e. one routing profile for when the user is at work, one routing profile for when she is at home, one for when the user is on-line, etc.

Detailed Description Text - DETX (108):

For session initiation (i.e. inviting another user to a session, accepting an invitation, etc.), in certain embodiments a subset of the Session Initiation Protocol (SIP, [1]) may be used. The SIP methods used include, e.g., the INVITE, ACK and CANCEL methods. SIP is explained, for example, in Handley/Schulzrinne/Schooler/Rosenberg, "SIP: Session Initiation Protocol," Internet Draft, Internet Engineering Task Force, August, 1998, the disclosure of which is hereby incorporated herein by reference. These suffice for users to initiate conferences and invite other users to them, or for two users to initiate a point-to-point conference. For session description, the Session Description Protocol is used. The Session Description Protocol is explained, for example, in M.

Detailed Description Text - DETX (109):

Handley and V. Jacobsen, "SDP: Session Description Protocol," RFC 2327, Internet Engineering Task Force, April 1998, the disclosure of which is hereby incorporated herein by reference.

Detailed Description Text - DETX (118):

As discussed above, services that facilitate things like knowing the online

status of other users, setting your (if you are a user 7) online status, and storing your contacts in a hierarchical list are also available. These services are provided by the following components: Online status service 31 and online status service proxy 51; Contact status service 53; and Contact list service 43.

Detailed Description Text - DETX (120):

FIG. 17 shows the data structures for the contact status service on each connection server in the same manner. Both of these data structures can be considered volatile and are kept in memory for efficiency reasons. The user's online status is subscribed from the responsible US 19 by CS(s) 21 that are watching the user as someone's contact. The CS that is connected to the user's client can update the user's online status (through the user service/user service proxy), and his/her contact list. When a US 19 gets a contact list request on a user that hasn't been loaded it loads the user data from the database. The user data is kept loaded while any CS 21 is using it. When all CSs have released the data, it can be unloaded from memory. The data may be kept in a cache of some sort for a while from where it can be quickly loaded. The version attributes of the lists serve the purpose of being able to know when to update the cache in a CS by checking the version number of the data stored on the CS and comparing it to the version number of the data stored on a US.

Detailed Description Text - DETX (130):

For every user 7, a certain set of data is stored. The data is kept in key/value pairs call properties. These can be global for everyone to see,

private only accessible for the user him self or it can be access controlled.  
FIG. 18b illustrates a data structure for a user profile according to an embodiment of this invention. The user property service 39 of a given user controls functionality and storage in this regard. Moreover, a "find user" service may be provided in certain embodiments, for enabling clients to find user IDs of other local cluster users by searching on their user properties (same properties as in the user property service 39).

Detailed Description Text - DETX (131):

For each cluster, there will be a single scaleable, robust, relational database 13 which contains all of the data the system uses which must be persistent. For smaller setups, this may be a single computer running a database such as Oracle or Informix. For larger setups where there is a very large number of users and a greater stability requirement, a cluster of high-performance computers reading from and writing to the same database will be used, and the database may, for example, reside on a mirrored, hot-swappable RAID setup. In this way, any level of redundancy can be achieved as well as the ability to deal with practically any number of users, without losing the option of running a small, cheap setup. The database 13 preferably contains the profile information kept for each user. The database will also contain the contact list and blinded list for each user. The contact list is a hierarchy of groups where a user can be part of more than one group, and a group contains all of the users it contains and recursively all of the users in groups it contains. Also stored in the database are the data for the different routing profiles for each user, along with data which describes which profile is

currently active, etc. Each user's Inbox is preferably stored in the database. This is a list of messages along with information on whether they are read or unread, ordered by time of storage. Also stored is a transaction history for the messages. Possible transactions include ADDED, DELETED, DESTROYED, MARKED READ and MARKED UNREAD. The DELETED and DESTROYED transactions are equivalent as regards the server system (i.e. they delete the message from the database) but are kept as two separate transactions for increased flexibility in the client (e.g. the client could use DELETED when it wants to delete a message both from its local cache and from the server, and DESTROYED when it wants to delete the message only from the server; the different transactions will allow other instances of the client to provide the same end-user experience). Moreover, all settings for back-end servers are stored in the database in certain embodiments, as are logs from the system, both logs for administrative purposes and logs for billing purposes. All settings for each user's client are also stored in the database in certain embodiments, except for settings that have to do with the client's location, e.g. firewall settings.

#### Detailed Description Text - DETX (147):

Moreover, it is noted that Connection Servers lie on the boundary between the unsecured Internet and the secure Intranet that hosts the cluster 1. Connection Servers may see all connected clients' traffic in cleartext, and also contain their own private keys in cleartext. Because Connection Servers are open to connections from the unsecured Internet and handle all client communications, they will function as firewalls of sort. Each CS 21 has two network interfaces, one to the unsecured Internet and one

to the secure intranet. There is no routing performed between the two networks. In certain embodiments, Connection Servers are able to log every connection and connection attempt. Log entries include such information as the date and time of day of the connection attempt, source IP number, user ID used for any authentication attempts and the reason for authentication failure. For successful connections, Connection Servers additionally log the time of disconnection and the amount of data transferred in each direction. In certain embodiments, it is preferred that the Community Operator filters and audits traffic from the Internet destined for the Connection Servers to prevent hacking and to keep track of any hacking attempts.

Detailed Description Text - DETX (149):

As can be seen from the above, a user 7 is able to create new profiles, delete profiles, edit profiles etc. and he shall be able to set which profile is currently active. Smart routing is based on the user's currently active profile and basically means that whenever another specific user tries to contact the user using a specific mode of communication that user will be routed to a conversation endpoint or message repository which can handle that mode of communication. Based on settings in the profile, the other user could be routed to an auto-replier which responds that the user doesn't like him and doesn't want his calls, or be put through to the user's GSM etc.

Detailed Description Text - DETX (154):

The system/network of this invention is preferably designed to be accessible via many different clients/users. The functionality of the application

back-end can be accessible from any client (although bridging work may be required). Several clients fall within the scope of the application. The "full client" features text and voice capabilities, and is a standard GUI program with a persistent connection to the server. This type of client is the one we are usually referring to when we say "a user shall be able to do X", i.e., this type of client is the one that allows the user to do X. Other clients are either stripped down versions of this one, or very limited clients. The "thin client" is a stripped down version of the full client which lacks one or more of its features (e.g., audio chat). The "web client" is a very basic client to the application which enables users with nothing more than access to a forms-enabled browser to send anyone in the community a page. There is no requirement of being able to receive pages via the web etc. The web client may optionally also enable the user to switch the profile currently being used. Optionally, the web client may enable users to view the contents of their inbox and read received messages. The "phone client" is a client which allows the user to phone a given number (a la voice mail) and switch the profile currently being used.

Detailed Description Text - DETX (155):

There can be, e.g., two categories of users that access the application.

For paying customers (i.e., telco end users) the requirement is made that no matter where they log on to the application, the user experience is identical

(i.e., no data is stored at the client side). This requirement is not made for

Internet end users.

Detailed Description Text - DETX (172):

The application is aimed at users who have access to the Internet and an account with a telephone company, and have received their application from the telephone company. These users are anything from novices to veterans who wish to use the Internet for communication. The application is also aimed at users who have access to the Internet and have received their application over the Internet (not through a telephone company). These users are anything from novices to veterans who wish to use the Internet for communication.

Other Reference Publication - OREF (1):

Hui, S., et al., A Dynamic IP Addressing System for Internet Telephony Applications, Computer Communications, vol. 21, No. 3, pp. 254-266, Mar. 1998.\*

Other Reference Publication - OREF (2):

"Using Hyperflow for Secure Internet Server Clusters"  
Cyber IQ Systems, Dec.  
1998, pp. 1-16.

US-PAT-NO: 6564261

DOCUMENT-IDENTIFIER: US 6564261 B1

TITLE: Distributed system to intelligently  
establish sessions between anonymous users over various  
networks

----- KWIC -----

Detailed Description Text - DETX (38):

"Profile." A set of routes where each route is enabled for a user or a group of users as defined in the buddy/contact list. A profile is complete in the sense that for every user there is a route for every mode of communication.

Detailed Description Text - DETX (56):

Referring to FIG. 6, as users 7 have a globally unique identity, connections between users can be forwarded across clusters 1 (i.e., from one cluster 1 to another cluster 1). This may be done via a special service, i.e., the inter-cluster service, that acts as a proxy between services in different clusters. From the point of view of the services involved, the proxy is preferably transparent or substantially transparent. The only limitation is that the cluster operator can configure the inter-cluster service to only allow remote access to a limited set of services. Thus operator specific value added services can be made exclusive for a given cluster.

Detailed Description Text - DETX (83):

As can be seen, the user servers (US) 19 includes online status service 31, user routing service(s) (RS) 33, device handlers 35,



session service 37, user property service 39, load balancing service 41, and contact list service 43. Connection servers (CS) 21 include online status service proxy 51, contact status service 53, and lots of generic proxies 54. Intra-cluster servers (ICS) 23 include lots of generic proxies 55. The framework underlying each of these servers includes a UMF 25, notification broadcasting 57, authentication 59, I/O model 61, protocol compiler 63, and resource and failure detection 65. Operation and maintenance (O & M) server(s) 64 handles system configuration (e.g., provision/assignment of users) and/or monitoring of servers/clients in certain embodiments.

Detailed Description Text - DETX (84):

Still referring to FIG. 13, the online status service 31 stores users' online statuses, and broadcasts changes to these to subscribed contact status services the online status service proxy 51 sits between the client 11 and the US 19, forwarding requests to change the client's user's online status; it handles failure tolerance in case the client's US fails. In the case where the US fails, the proxy 51 will try to contact the US 19 that the UMF 25 has allocated for the user after the US crash, and establish the user's online status on that server. The contact status service 53 subscribes to the online status of every user from its client's contact list. The contact list service 43 stores each user's contact list, allows the user 7 to access and manage it, and allows other services to read it (a blinded list may be a group in the contact list). The routing service (RS) 33 receives messages from users, and sends them to the correct device according to routing logic which resides at both the sending user's and the receiving user's side and

can be set up by either user. The RS 33 allows users to access and manage their routing table.

Detailed Description Text - DETX (85):

Generic proxy(ies) 54, 55 resides on a CS 21 or an ICS 23. This component's responsibility is to act as a dumb, byte-forwarding proxy to many different services which reside on USs 19. Each device handler 35 at a server can receive messages, pass them to the user or an external system (such as SMS), store them, act on them, etc. Thus, device handlers 35 can act as bridges to external systems. The user property service 39 allows users 7 to read and change their own user profile, and to read those parts of other user's 7 profiles that they have access to.

Detailed Description Text - DETX (103):

Although not logically part of the framework (it's a service), the generic proxy 54, 55 is one of the core services supplied with the framework. Generic proxies act as byte-forwarding proxies from one stream to another. On CSs 21, generic proxies 54 are used in the following way: A generic proxy is registered for each protocol that clients are supposed to have access to in the back-end. When the generic proxy gets a connection request (type=x, src UID=y, dst UID=z), it will accept it, then ask its framework to open a stream with parameters (x, y, z). Since the internal UMF is being used on CSs 21, this will open a stream to the US 19 servicing destination UID z, or to the ICS 23 which is acting as a bridge to the cluster user z resides on. On other server types (e.g., US and/or ICS), generic proxies 55 are used in the same way. The difference here is that for connection requests coming from external clusters,

the internal mapping function is used, but for connection requests coming from within the local cluster, the external mapping function is used. As can be seen from analysis of the above, the framework stream model, the UMF and generic proxies on ICSs allow services to connect to services for any user that can be reached in the network without knowing any details except the type of service that is to be connected to and the UID of the user to be connected to.

Detailed Description Text - DETX (107):

Routing logic (i.e. which choices are made to decide what to do with a message) may be implemented, e.g., by an RS 33, in a special-purpose pseudo-programming language dubbed RoutingTree, which is in essence a tree of nodes where all non-leaf nodes are decision points and leaf nodes are action nodes. Decisions at decision nodes can be made on a number of parameters, including the contents of the message being routed, the time and date, the state of certain parts of the database, etc. For each user, several different named routing profiles may be specified. Each routing profile contains a RoutingTree-specified routing logic. Routing profiles may be defined by the client. One routing profile is always active as the routing profile to use for incoming messages (which one to use may be defined by the client), and whenever the client sends a message it specifies which routing profile to use for the outgoing message. In this way, different routing profiles may be used for different situations, i.e. one routing profile for when the user is at work, one routing profile for when she is at home, one for when the user is on-line, etc.

Detailed Description Text - DETX (118):

As discussed above, services that facilitate things like knowing the online status of other users, setting your (if you are a user 7) online status, and storing your contacts in a hierarchical list are also available. These services are provided by the following components: Online status service 31 and online status service proxy 51; Contact status service 53; and Contact list service 43.

Detailed Description Text - DETX (120):

FIG. 17 shows the data structures for the contact status service on each connection server in the same manner. Both of these data structures can be considered volatile and are kept in memory for efficiency reasons. The user's online status is subscribed from the responsible US 19 by CS(s) 21 that are watching the user as someone's contact. The CS that is connected to the user's client can update the user's online status (through the user service/user service proxy), and his/her contact list. When a US 19 gets a contact list request on a user that hasn't been loaded it loads the user data from the database. The user data is kept loaded while any CS 21 is using it. When all CSs have released the data, it can be unloaded from memory. The data may be kept in a cache of some sort for a while from where it can be quickly loaded. The version attributes of the lists serve the purpose of being able to know when to update the cache in a CS by checking the version number of the data stored on the CS and comparing it to the version number of the data stored on a US.

Detailed Description Text - DETX (130):

For every user 7, a certain set of data is stored. The

data is kept in key/value pairs call properties. These can be global for everyone to see, private only accessible for the user him self or it can be access controlled. FIG. 18b illustrates a data structure for a user profile according to an embodiment of this invention. The user property service 39 of a given user controls functionality and storage in this regard. Moreover, a "find user" service may be provided in certain embodiments, for enabling clients to find user IDs of other local cluster users by searching on their user properties (same properties as in the user property service 39).

Detailed Description Text - DETX (131):

For each cluster, there will be a single scaleable, robust, relational database 13 which contains all of the data the system uses which must be persistent. For smaller setups, this may be a single computer running a database such as Oracle or Informix. For larger setups where there is a very large number of users and a greater stability requirement, a cluster of high-performance computers reading from and writing to the same database will be used, and the database may, for example, reside on a mirrored, hot-swappable RAID setup. In this way, any level of redundancy can be achieved as well as the ability to deal with practically any number of users, without losing the option of running a small, cheap setup. The database 13 preferably contains the profile information kept for each user. The database will also contain the contact list and blinded list for each user. The contact list is a hierarchy of groups where a user can be part of more than one group, and a group contains all of the users it contains and recursively all of the users in groups it contains. Also stored in the database are the data for the

different routing profiles for each user, along with data which describes which profile is currently active, etc. Each user's Inbox is preferably stored in the database. This is a list of messages along with information on whether they are read or unread, ordered by time of storage. Also stored is a transaction history for the messages. Possible transactions include ADDED, DELETED, DESTROYED, MARKED READ and MARKED UNREAD. The DELETED and DESTROYED transactions are equivalent as regards the server system (i.e. they delete the message from the database) but are kept as two separate transactions for increased flexibility in the client (e.g. the client could use DELETED when it wants to delete a message both from its local cache and from the server, and DESTROYED when it wants to delete the message only from the server; the different transactions will allow other instances of the client to provide the same end-user experience). Moreover, all settings for back-end servers are stored in the database in certain embodiments, as are logs from the system, both logs for administrative purposes and logs for billing purposes. All settings for each user's client are also stored in the database in certain embodiments, except for settings that have to do with the client's location, e.g. firewall settings.

#### Detailed Description Text - DETX (149):

As can be seen from the above, a user 7 is able to create new profiles, delete profiles, edit profiles etc. and he shall be able to set which profile is currently active. Smart routing is based on the user's currently active profile and basically means that whenever another specific user tries to contact the user using a specific mode of communication that user will be

routed to a conversation endpoint or message repository which can handle that mode of communication. Based on settings in the profile, the other user could be routed to an auto-replier which responds that the user doesn't like him and doesn't want his calls, or be put through to the user's GSM etc.

#### Detailed Description Text - DETX (154):

The system/network of this invention is preferably designed to be accessible via many different clients/users. The functionality of the application back-end can be accessible from any client (although bridging work may be required). Several clients fall within the scope of the application. The "full client" features text and voice capabilities, and is a standard GUI program with a persistent connection to the server. This type of client is the one we are usually referring to when we say "a user shall be able to do X", i.e., this type of client is the one that allows the user to do X. Other clients are either stripped down versions of this one, or very limited clients. The "thin client" is a stripped down version of the full client which lacks one or more of its features (e.g., audio chat). The "web client" is a very basic client to the application which enables users with nothing more than access to a forms-enabled browser to send anyone in the community a page. There is no requirement of being able to receive pages via the web etc. The web client may optionally also enable the user to switch the profile currently being used. Optionally, the web client may enable users to view the contents of their inbox and read received messages. The "phone client" is a client which allows the user to phone a given number (a la voice mail) and switch the profile currently being used.

US-PAT-NO: 6496681

DOCUMENT-IDENTIFIER: US 6496681 B1

TITLE: Method and system for accessing and  
interchanging multimedia data in an interactive  
format professional development platform

----- KWIC -----

Abstract Text - ABTX (1):

A method and system for assessing educator/student skills, managing the teaching, evaluating, verifying, and reporting of an instructional segment to a given user accessing the instructional segment via a computer system are disclosed. The system for skills assessment and knowledge, managing the instructional segment and providing the verification, evaluation, teaching, and reporting of the user's activity with the instructional segment is implemented within a computer system, typically a network connected system that has access to the Internet. The managing system includes means for streaming or broadcasting the instructional segment to the user for review by the user, means for evaluating the user's comprehension of the instructional segment, means for verifying whether the user has completed or accessed the instructional segment, and means for reporting the user's evaluation results of the instructional segment to an administrator or administrators. Further included are means for granting the user access to the instructional segment via a user handle and a private password that are corroborated by the database system during the user accessing the instructional segment.



Brief Summary Text - BSTX (4):

Computers have also allowed for the dissemination of information either to limited groups or to large audiences via such communication channels as local area networks (LANs), wide area networks (WANs), and the Internet. Within this transmission of information, multimedia presentations have expanded to broaden the information dissemination and educational opportunities available over LANs, WANs, and the Internet.

Brief Summary Text - BSTX (7):

The Internet has provided interactivity where an Internet user is able to browse among various web sites for information. Upon finding a site of interest to the user, that site at times is able to glean information from the user that would be helpful for the web provider in a commercial or social context. For example, a user may visit a commercial site that sells widgets. The widget provider questions the user about what the user's needs are in order for the widget provider to best serve the needs of its clientele. This information is reported back to the widget provider so the widget provider can provide the best commercial site possible based on the needs of its clients.

Brief Summary Text - BSTX (10):

Accordingly, what is needed is an interactive process that allows for educational and professional development via a computer system coupled to an Internet channel that allows an end user to view a presentation, be evaluated on the understanding gained by the user after the presentation, and reporting the results of the user's activity and evaluation to a supervisor that uses

that data to verify, evaluate, and enhance educational or teacher development, which data can also be used for professional development credit or even college credit. Further still, what is needed is the ability to assess the knowledge and skills of particular participants within a program and customize the content to be provided to those participants in a seamless manner. Further still, what is needed is the ability to provide participant summary data from institutions, feeder zones, areas, districts, regions, or state levels in the evaluation of educational and teacher development.

Brief Summary Text - BSTX (12):

According to the present invention, a method and system for assessing educator/student skills, managing the teaching, evaluating, verifying, and reporting of an instructional segment to a given user accessing the instructional segment via a computer system are disclosed. The system for skills assessment and knowledge, managing the instructional segment and providing the verification, evaluation, teaching, and reporting of the user's activity with the instructional segment is implemented within a computer system, typically a network connected system that has access to the Internet. The managing system includes means for streaming or broadcasting the instructional segment to the user for review by the user, means for evaluating the user's comprehension of the instructional segment, means for verifying whether the user has completed or accessed the instructional segment, and means for reporting the user's evaluation results of the instructional segment to an administrator or administrators. Further included are means for granting the user access to the instructional segment via a user handle and a private

password that are corroborated by the database system during the user accessing the instructional segment.

Brief Summary Text - BSTX (13):

The streaming means comprise an electronic data communications channel connected to the user with the computer system. As previously stated, this electronic data communications channel can include a local area network connection, a wide area network connection, or an internet connection that can access such networks as the World Wide Web. The internet connection can be via a LAN connection or direct dial. The reporting means includes a database for organizing, storing and retrieving the results of an evaluation performed by the user. The evaluation means electronically generates an exam to be taken by the user and records the results of that evaluation for subsequent review. The reporting means is further capable of reporting the length of time required by the user to complete the evaluation, which is helpful in evaluating how quickly the user assimilates the reviewed materials. The report also includes the results of the evaluation, which may be reported back to the user for the user's own understanding of his or her grasp of the subject matter.

Detailed Description Text - DETX (5):

Input and output to computer system 100 are provided by a number of devices. For example, a keyboard and mouse controller 155 connects to bus 130 for controlling a keyboard input device 156 and a mouse input device 157. A DMA controller 160 is provided for performing direct memory access to system RAM 110. A visual display is generated by a video controller 165, which controls a video output display 170. The computer also includes a

communications adapter  
190 which allows the system to be interconnected to a local  
area network (LAN)  
195, a wide area network (WAN), as well as provide a  
Internet connect either  
via direct dial, or via the LAN or WAN, which is  
schematically illustrated by  
bus 191.

Detailed Description Text - DETX (6):

The computer 100 is generally controlled and coordinated  
by operating system  
software, such as the Windows 95, 98, NT, 2000, or other  
compatible operating  
systems. In the Macintosh systems, the operating system  
conforms to 7.5.5 and  
higher. Workstation compatible systems typically use a  
UNIX/LINUX-type  
operating system. Conventional operating systems control  
and schedule computer  
processes for execution, perform memory management, provide  
file system,  
networking, and I/O services, and provide a user interface,  
such as a graphical  
user interface ("GUI"), among other things. User  
applications, such as  
editors, spread sheets, and Internet browsers, directly or  
indirectly rely on  
these and other capabilities of the operating system.

Detailed Description Text - DETX (7):

Computer 100 connects to a network 195, which provides  
access to an  
instructional server database 200, which is shown in FIG.  
2. Server database  
200 includes a data server 202, communications server 204,  
and a video server  
206. These all may be incorporated in a server computer  
system similar to  
computer 100 in hardware configuration, which utilizes an  
internet browser to  
provide access to a multitude of instructional media by an  
end user at computer  
100. Further, server database system 200 provides for  
reporting of a user's  
interaction to a supervisor. For example, the principal of

the school would be  
a supervisor of a teacher viewing the instructional media.  
The instructional  
media provides an interactive session with the teacher, who  
may answer  
questions, simple answer or multiple choice, or complete an  
essay exam or based  
on the information conveyed during the interactive session.

A report of the  
user's performance and responses are what are forwarded to  
the supervisor in  
this example. Other examples include providing test  
results of a student  
taking an online instructional course, professionals  
reviewing continuing  
professional education requirements such as required in  
law, accounting or  
medicine.

Detailed Description Text - DETX (8):

Communications link 191 can be a direct line connecting  
to database server  
200, such as a MODEM connection, DSL connection, ISDN, T-1,  
satellite, or the  
like. Link 191 may also be via a network that has an  
Internet server connected  
thereto. Further, system 200 may be part of a LAN or WAN  
and have the  
instructional media stored there on with management systems  
resident thereon  
for organizing and managing the feedback information  
received from the users  
which is to be reported back to the appropriate supervisor.

Detailed Description Text - DETX (9):

Server 204 controls the access to the learning resources  
that are stored  
within database server 202. The learning resources can be  
placed within server  
204 via an interchangeable instructional or lesson module  
205. The  
functionality of lesson module 205 is given in greater  
detail below. Server  
204 allows end users, via their computers 100 to access the  
instructional  
materials available via the communication channel 191. A

user utilizes a web browser, such as, for example, NetScape Navigator.TM., Microsoft Internet Explore.TM., or other web browsers known to those skilled in the art. The instructional materials are down loaded via video server 206 in multimedia form that include streaming or broadcasting video as well as video, audio, and text portions. A streaming video program is utilized as a plug-in to the web browser to allow viewing of the streaming video portion of the instructional segment. Examples of functional streaming video applets include RealPlayer.TM. provided by RealNetworks, as well as other streaming video products such as Windows Media Player provided by Microsoft, Inc. and QuickTime Player, provided by Apple Corporation.

Detailed Description Text - DETX (10):

The instructional segments are streamed across the communications channel, i.e. the Internet, on demand to the end users. Also, the segments may be stored on a proxy cache server for non-internet access should the net connection be disconnected as well as to maximize bandwidth utilization. The users gain access to the authorized programs following a log-in and password sequence. Once logged on, the users can choose from several titles that are within their licensed course materials. FIG. 3 is a block diagram illustrating the method of granting access to the instructional segments, evaluating the user's understanding of the viewed materials, and providing report information back to the user's supervisors in accordance with the principles of the present invention. FIG. 4 is a block diagram illustrating the method of granting an authorized supervisor of one or more users access to user(s) records relating to information viewed and accessed by the user(s). FIGS.

5-12 illustrate screen images of a GUI viewed by either a user, administrator, or both in accessing the instruction materials, the report materials, or other evaluation materials contemplated within the present invention.

Detailed Description Text - DETX (11):

In block 310, the user accesses database server 200 by selecting the appropriate instructional resource, either as web-based URL location via a web browser utilized by the user on the user's computer system 100. Upon accessing the appropriate web page, information is downloaded across the communications channel to the end user's system 100 for display. FIG. 5 illustrates a screen image of a user or administrator accessing an Internet or other computer or network accessible site. View 510 provides the user with several options, including accessing a Professional Development section, or accessing an Educator, Presenter, or Career section. Further, an online bookstore may be included, as well as other options as considered by the developer of the Web site. In this illustration, it is shown that the user is using Microsoft Internet Explorer as a web browser, which is readily available either at a commercial site, store, or free from many well known web sites. Just as the instructional sections are accessible by more than one user, so to the administrative sections can be accessed by more than one instructional leader or administrator.

Detailed Description Text - DETX (14):

The user then makes a selection. At this point a log-in procedure is provided for the user in block 312 that requires the user to enter in a password and log-in handle. FIG. 6 depicts a GUI

illustration of the USER LOGIN screen 610. There is a USER login handle 612 and a password field 614. The user clicks on the SUBMIT button 616 to submit the login and user handle information. The system performs the handshake operation to verify the access rights of the user based on the appropriate login handle and password. Upon verification, the system, as shown in block 314, grants access to the title page to allow the user to select among the instructional segments provided for view. Other optional features include joining a chat discussion on the subject matter of a given segment as well as providing a threaded discussion group for review and correspondence among fellow users. The title page 710 is illustrated in the GUI panel of FIG. 7. Further illustrated is a list of exemplary options, such as VIEW VIDEOS, VERIFY RESPONSES, MAINTENANCE hierarchy, REPORTING, MAINTAIN LICENSES, and LOGOUT. Within the MAINTENANCE portion, the administrator, depending upon granted access rights, can access hierarchies at the State/Province, Region, District, School, Department levels. The administrator also has access to the users in the Maintain Educators selection. Other options of course are possible depending upon the subject matter and interest of the system designer.

Detailed Description Text - DETX (26):

FIG. 17 illustrates a sample User Setup area window 1710 in accordance with the present invention. Window 1710 includes an alphabetical listing for quick access to a user. By selecting one of the listed letters, the administrator will be given a listing of those users (teachers) having a last name beginning with the selected letter. The user profiles include the user's name, first and last, active status, email address, user type, last login



information, and  
total login count. Selection of a users UserName causes  
the system to pull up  
the user's profile window 1810 shown in FIG. 18.

Detailed Description Text - DETX (32):

The modules are readily installed within the interactive multimedia presentation and review system, shown in block 2012, by way of specific fields that are provided that either map or direct the system to access materials within the module at the appropriate time for presentation of various subject matters. Each module can include assessment information, such as a pre-test, to determine the status and comprehension of the participant. An assessment screen will be displayed that begins the procedure for the participant. The assessment screen is tied to this particular location through a flag or a direct subroutine to pull the screen up at the appropriate time. Prior to that, a user menu would be provided that allows the user to view the user's profile, any review materials provided for the user, the assessment portion, or any other areas that have been granted access to the user based on the user's performance or status.

Detailed Description Text - DETX (45):

In another exemplary embodiment, the invention may be implemented as a computer program product for use with a computer system. Such implementation may include a series of computer instructions fixed either on a tangible medium, such as a computer readable media (e.g. diskette 142, DVD or CD-ROM 147, ROM 115, or fixed disk 152 as shown in FIG. 3) or transmittable to a computer system, via a modem or other interface device, such as communications adapter 190 connected to the network 195 over a medium 191.

Medium 191 may be either a tangible medium (e.g., optical or analog communications lines) or a medium implemented with wireless techniques (e.g., microwave, infrared or other transmission techniques). The series of computer instructions embodies all or part of the functionality previously described herein with respect to the invention. Those skilled in the art should appreciate that such computer instructions can be written in a number of programming languages for use with many computer architectures or operating systems. Furthermore, such instructions may be stored in any memory device, such as semiconductor, magnetic, optical or other memory devices, and may be transmitted using any communications technology, such as optical, infrared, microwave, or other transmission technologies. It is expected that such a computer program product may be distributed as a removable media with accompanying printed or electronic documentation (e.g., shrink wrapped software), preloaded with a computer system (e.g., on system ROM or fixed disk), or distributed from a server or electronic bulletin board over a network (e.g., the Internet or World Wide Web).

Claims Text - CLTX (15):

15. The invention in accordance with claim 1, wherein the streaming means comprises an internet communications link between the user and the computer system.

Claims Text - CLTX (31):

31. The invention in accordance with claim 17 wherein the streaming step comprises connecting the user and the computer system via an internet connection.